

Name:

Date:

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**PART A** In the space on the left, write the letter of the term or phrase which **best** completes the statement or answers the question (1 mark each).

- \_\_\_\_\_ 1. The loss of energy between trophic levels is shown by ...  
a. Food webs and food chains  
b. Food webs and food pyramids  
c. Food chains and food pyramids  
d. Food pyramids only
- \_\_\_\_\_ 2. \_\_\_\_\_ is the action of living organisms to break down dead organic matter.  
a. biodegradation  
b. decomposition  
c. bioremediation  
d. bioaccumulation
- \_\_\_\_\_ 3. Each step in a food chain is called a ...  
a. web  
b. trophic level  
c. pyramid  
d. none of the above
- \_\_\_\_\_ 4. Which of the following will cycle carbon through ecosystems?  
a. Photosynthesis  
b. Volcanic activity  
c. Ocean processes  
d. All of the above
- \_\_\_\_\_ 5. The process that makes change in living things possible is called ...  
a. evolution.  
b. adaptation.  
c. natural selection.  
d. survival of the fittest.
- \_\_\_\_\_ 6. Cigarette smoke is a source of which heavy metal?  
a. mercury  
b. cadmium  
c. DDT  
d. iron

- \_\_\_\_\_ 7. The essential element in the molecule that carries energy to plant and animal cells **is** ...  
a. nitrogen  
b. carbon  
c. phosphorous  
d. oxygen
- \_\_\_\_\_ 8. Introduced species can affect ecosystems by ...  
a. predation  
b. disease  
c. habitat alteration  
d. all of the above
- \_\_\_\_\_ 9. The process in which chemicals become more concentrated at each trophic level is called ...  
a. bioaccumulation  
b. biomagnification  
c. biodegradation  
d. bioremediation
- \_\_\_\_\_ 10. Which of the following shows the correct flow of energy through an ecosystem?  
a. producers, primary consumers, secondary consumers, tertiary consumers, detritivores  
b. primary consumers, secondary consumers, tertiary consumers, detritivores, producers  
c. primary consumers, secondary consumers, tertiary consumers, producers, detritivores  
d. producers, detritivores, primary consumers, secondary consumers, tertiary consumers
- \_\_\_\_\_ 11. \_\_\_\_\_ are the ways we obtain and use the resources found in the environment.  
a. land use.  
b. resource use.  
c. sustainability.  
d. habitat alteration.
- \_\_\_\_\_ 12. Which of the following is not an abiotic component of an ecosystem?  
a. Fungi  
b. Sunlight  
c. Moisture  
d. Temperature
- \_\_\_\_\_ 13. The special role that an organism has in the ecosystem in which they live is called its ...  
a. niche  
b. habitat  
c. community  
d. population
- \_\_\_\_\_ 14. Knowledge gained over centuries reflecting human experience with nature is called ...  
a. ecological succession.  
b. ecological research.  
c. traditional ecological knowledge.  
d. scientific ecological knowledge.

- \_\_\_ 15. The term used to describe when species spread out to inhabit different niches is called ...
- a. natural selection.
  - b. ecological succession.
  - c. habitat loss.
  - d. adaptive radiation.

**PART B** In the space provided mark each of the following as true or false. (1 mark each)

- \_\_\_ 1. Volcanic activity accounts for more than 40% of the mercury released into the atmosphere.
- \_\_\_ 2. Most of the sun's energy that is trapped by plants flows out of an ecosystem.
- \_\_\_ 3. Two sources of lead in modern consumer goods are batteries and computers.
- \_\_\_ 4. Soil degradation can be caused by deforestation.
- \_\_\_ 5. High pressure systems over tropical oceans cause hurricanes.
- \_\_\_ 6. Detritivores feed at all trophic levels.
- \_\_\_ 7. Food webs and food pyramids both model energy flow within ecosystems.
- \_\_\_ 8. Tundra, Permanent Ice, Cold Desert and Boreal Forest biomes can all be found in Canada.
- \_\_\_ 9. All living things contain carbon atoms in their cells.
- \_\_\_ 10. Omnivores are primary consumers and primary producers.
- \_\_\_ 11. Mature forest communities are constantly changing.
- \_\_\_ 12. Phosphorous is found stored in the atmosphere.
- \_\_\_ 13. The process that converts solar energy into chemical energy is called cellular respiration.
- \_\_\_ 14. Fungicides and herbicides are types of pesticides.
- \_\_\_ 15. About 78% of the Earth's atmosphere is oxygen.

**PART C** In the space provided, match each term or phrase with the best definition. (1 mark each)

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| ___ 1. Parasitism             | A. Physical feature of an organism's body having a specific function.    |
| ___ 2. Consumers              | B. A mature community that continues to change over time.                |
| ___ 3. Ecological succession  | C. Relationship between two organisms benefiting both.                   |
| ___ 4. Structural adaptation  | D. Organisms that eats other organisms.                                  |
| ___ 5. Commensalism           | E. Breaking down of dead organic matter by living organisms.             |
| ___ 6. Behavioural adaptation | F. Organisms that break down wastes and dead organisms.                  |
| ___ 7. Climax community       | G. The best-adapted members of a species will survive and reproduce.     |
| ___ 8. Decomposers            | H. Gradual build-up of synthetic and organic chemicals in living things. |
| ___ 9. Biodegradation         | I. Covers much of Canada, Russia, and Scandinavia.                       |
| ___ 10. Bioremediation        | J. Relationship where one species benefits and the other is not harmed.  |
| ___ 11. Mutualism             | K. Organisms that make carbohydrates during photosynthesis.              |
| ___ 12. Natural selection     | L. Relationship in which one species benefits and another is harmed.     |
| ___ 13. Boreal forest biome   | M. Use of organisms to break down chemical pollutants.                   |
| ___ 14. Bioaccumulation       | N. Changes that occur over time in the types of organisms in an area.    |
| ___ 15. Producers             | O. What an organism does to survive unique environmental conditions.     |

**PART D** Each of the following questions requires a short answer.

1. What is the difference between a food chain and a food web? (2 marks)
  
  
  
  
  
  
  
  
  
  
2. Name the three nutrient cycles. (3 marks)

3. Name and describe the location, climate, at least one physical feature, and at least one plant and one animal adaptation of the temperate grassland biome found in Canada. (5 marks)
4. Name and explain three processes of nitrogen fixation. (9 marks)
5. What are the three most harmful heavy metals? Give two reasons why this is so. (3 marks)

6. How does adaptation to changes in the environment help a species? (1 mark)
7. What is the process that makes change possible in living things called? Describe how it works. (4 marks)
8. What process can create a complex food web from bare rock? Explain this process in detail. (7 marks)
9. What effect have humans had on wetlands in British Columbia over the past 100 years? (5 marks)

10. What is meant by sustainability? Summarize the concept. (6 marks)

11. What is secondary succession? How does it differ from primary succession? (5 marks)

12. Define what a food web is and draw and label one. (5 marks)